UNITED STATES DEPARTMENT OF COMMERCE
Patent and Trademark Office
Address: COMMISSIONER OF PATENTS AND TRADEMARKS
Washington, D.C. 20231

VB

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.
08/441,355	05/15/95	HOUGHTON M	0063.021

HM22/1015

ALISA A HARBIN
CHIRON CORPORATION
INTELLECTUAL PROPERTY R440
PO BOX 8097
EMERYVILLE CA 94662-8097

EXAMINER	
ZEMAN, M	
ART UNIT	**PAPER NUMBER**
1643	19

DATE MAILED: 10/15/99

Please find below and/or attached an Office communication concerning this application or proceeding.

Commissioner of Patents and Trademarks

Office Action Summary	Application No. 08/441,355	Applicant(s) HOUGHTON ET AL.	
	Examiner Mary K Zeman	Art Unit 1643	

-- Th MAILING DATE of this communication app ars on th cover she t with the correspondenc address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136 (a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).

Status

1)☒ Responsive to communication(s) filed on *05 August 1999* .

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *88-104 and 106-114* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *88-97 and 104* is/are rejected.

7)☒ Claim(s) *88-103 and 106-114* is/are objected to.

8)☐ Claims _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are objected to by the Examiner.

11)☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved.

12)☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. § 119

13)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d).

a)☐ All b)☐ Some * c)☐ None of the CERTIFIED copies of the priority documents have been:

1.☐ received.

2.☐ received in Application No. (Series Code / Serial Number) _____ .

3.☐ received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14)☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. & 119(e).

Attachment(s)

14) ☐ Notice of References Cited (PTO-892)
15) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
16) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ .
17) ☐ Interview Summary (PTO-413) Paper No(s). _____ .
18) ☐ Notice of Informal Patent Application (PTO-152)
19) ☐ Other: .

DETAILED ACTION

Claims 88-104 and 106-114 are pending in this application. Claim 105 has been canceled.

Applicant's arguments filed 8/5/99 have been fully considered but they are not completely persuasive.

In view of Applicant's arguments and/or amendments the following objections or rejections are withdrawn:

The rejection of claims 88-114 under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention is withdrawn.

The rejection of claims 88-114 rejected under 35 U.S.C. 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention is withdrawn as it applies to the terms antigenic and immunogenic.

The rejection of claims 88-99 and 111-114 under 35 U.S.C. 102(b) as being anticipated by Bradley is withdrawn.

The rejection of claims 88-99 and 111-114 under 35 U.S.C. 102(b) as being anticipated by He is withdrawn.

The rejection of claims 88-99 and 111-114 under 35 U.S.C. 102(b) as being anticipated by Prince is withdrawn.

Rejections Maintained

Claims 89-91 remain rejected under 35 U.S.C. 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention for the reasons of record.

Claims 89-91 refer specifically to the proteins E1, E2 and an E1/E2 complex. The specification, as filed, fails to set forth these terms and their definition such that it was clear that applicant had possession of the E1, E2 or E1/E2 complexed proteins at the time of the invention. the specification refers generally to supposed "envelope proteins" and a general area of the polyprotein where they may be, but does not discretely identify the envelope proteins, nor does it give them the names E1, or E2. There is no disclosure in the application as filed, that the envelope protein(s) may form a complex of any kind. Therefore these claims represent new matter and must be canceled in response to this rejection.

Claims 88, 92-97 and 104 remain rejected under 35 U.S.C. 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention as it applies to the term "immunogenic fragments" of HCV polypeptides for the reasons set forth in the previous office action.

As set forth previously, the specification does not offer a written description of any immunogenic fragments of HCV, nor does it teach how to identify such fragments. Legal precedent dictates that conception of a chemical compound, such as a DNA molecule, or

polypeptide sequence, is not achieved until reduction to practice has occurred. (*Amgen Inc v. Chugai Pharmaceutical Co. Ltd* 18 USPQ2d 1016-1031 (CAFC 1991); *Fiers v. Revel* 25 USPQ2d 1601-1607 (CAFC 1993)). At no point in the specification are particular immunogenic fragments of HCV polypeptides disclosed. In *Amgen Inc v. Chugai Pharmaceuticals Co. Ltd* 18 USPQ2d 1016 (CAFC 1993) the court ruled that:

> Conception of a chemical compound requires that inventor be able to define compound so as to distinguish it from other materials, and to describe how to obtain it, rather than simply defining it solely by its principal biological property; thus, when inventor of gene, which is chemical compound albeit complex one, is unable to envision detailed constitution of gene so as to distinguish it from other materials, as well as method for obtaining it, conception is not achieved until after gene has been isolated.

The court further elaborated on this point and concluded that:

> A gene is a chemical compound, albeit a complex one, and it is well established in our law that conception of a chemical compound requires that the inventor be able to define it so as to distinguish it from other materials, and to describe how to obtain it. *See Oka*, 849 F2d at 583 7 USPQ2d at 1171. Conception does not occur unless one has a mental picture of the structure of the chemical, or is able to define it by its methods of preparation, its physical or chemical properties, or whatever characteristics sufficiently distinguish it. It is not sufficient to define it solely by its principal biological property, e.g., encoding human erythropoetin, because an alleged conception having no more specificity than that is simply a wish to know the identity of any material with that biological property. We hold that when an inventor is unable to envision the detailed constitution of a gene so as to distinguish it from other materials, as well as a method for obtaining it, conception has not been achieved until reduction to practice has occurred, i.e., until after the gene has been isolated. (emphasis added)

Applicant has pointed to recitations in the specification indicating that immunogenic regions of HCV could exist, and could be identified, however, those regions or sequences were

not identified. These arguments are analogous to the above recited "wish to know the identity" of those other immunogenic fragments of HCV polypeptides.

The significance of conception and reduction to practice was further addressed by the court in *Fiers v. Revel* 25 USPQ2d 1601-1607 (CAFC 1993):

> Conception is question of law, reviewed de novo on appeal, and if inventor is unable to envision detailed chemical structure of DNA sequence coding for specific protein, as well as method of obtaining it, then conception is not achieved until reduction to practice has occurred, that is, until after gene has been isolated; thus, regardless of complexity or simplicity of method of isolation employed, conception of DNA sequence, like conception of any chemical substance, requires definition of that substance other than by its functional utility. (emphasis added)

In the instant application, Applicants have identified antigenic polypeptides of HCV. The immunogenicity, as defined by Applicant, of any polypeptides made from the disclosed HCV sequences is not addressed in the specification. As argued by Applicant, the sequence of HCV was previously unknown and one would not have been able to predict the immunogenicity of any HCV proteins at the time the invention was made.

Even if one concedes for arguments sake that it does not require undue experimentation to obtain immunogenic fragments it remains that one is not taught how to use any fragment made. One is not taught how to use an immunogenic fragment by reference to a catalog of potential uses, such a catalog merely sets forth additional experimental challenges to discover the use. Moreover, immunogenicity in one species does not necessarily reflect immunogenicity in other species. Having in hand immunogenic fragments of HCV polypeptides permits one to test for those which could confer protective immunity, however, there is no predictability as to which one, if any, will elicit protective immunity.

Nowhere in the specification are the proteins of HCV described or isolated. The claims embrace the proteins which naturally occur as part of the virion, however, the specification fails to set forth their isolation as well as failing to set forth how to isolate the virus. Nor can one infer what proteins are present in the virion from the presumptive polyprotein as HCV is neither a flavivirus nor a togavirus.

Conclusion

No claim is allowed.

Claims 98-103 and 106-114 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Transitional After Final Practice

Since the fee set forth in 37 CFR 1.17(r) for a first submission subsequent to a final rejection has been previously paid, applicant, under 37 CFR 1.129(a), is entitled to have a second submission entered and considered on the merits if, prior to abandonment, the second submission and the fee set forth in 37 CFR 1.17(r) are filed prior to the filing of an appeal brief under 37 CFR 1.192. Upon the timely filing of a second submission and the appropriate fee of $XX for a large entity under 37 CFR 1.17(r), the finality of the previous Office action will be withdrawn. If a notice of appeal and the appeal fee set forth in 37 CFR 1.17(e) were filed prior to or with the payment of the fee set forth in 37 CFR 1.17(r), the payment of the fee set forth in 37 CFR 1.17(r) by applicant will be construed as a request to dismiss the appeal and to continue prosecution under 37 CFR 1.129(a). In view of 35 U.S.C. 132, no amendment considered as a result of payment of the fee set forth in 37 CFR 1.17(r) may introduce new matter into the disclosure of the application.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Mary K Zeman whose telephone number is (703) 305-7133. The examiner can be reached between the hours of 7:30 am and 5:00 pm Monday through Thursday, and on alternate Fridays.

If attempts to reach the examiner by telephone are unsuccessful, Donna Wortman, Primary Examiner, can be reached on (703) 308-1032.

The fax number for this Art Unit is (703) 305-7401.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Group receptionist whose telephone number is (703) 308-0196.

mkz
October 14, 1999

DONNA WORTMAN
PRIMARY EXAMINER